2-1-1999

Land Development and Biotechnology at the Claremont Colleges

Paul Faulstich
Pitzer College

Land Development and Biotechnology at the Claremont Colleges

Paul Faulstich

Founded on the Oxford model of a cluster of institutions, the Claremont Colleges has periodically established a new school. In the Spring of 1997, the Board of Fellows of the Claremont University Center—charged with policy-making for the consortium—voted to establish a seventh college; the Keck Graduate Institute of applied life sciences, or bioengineering. Despite other landholdings, including a golf course and a non-operational gravel quarry, the Board of Fellows voted to site the New Venture on a portion—approximately eleven acres—of the Bernard Biological Field Station. (Pitzer's vote was cast against building on the Field Station.)

The Bernard Biological Field Station, used primarily by Claremont Colleges' students for field research, is currently an 85 acre parcel where the ecological interactions of plants and animals can be studied under natural conditions. Operated jointly by the Colleges, the Field Station has played an increasingly important role in the education of our students. It contains an unusual variety of habitats: a constructed lake, a riparian zone, oak woodlands, vernal pools, and coastal sage scrublands. The station also includes a number of sensitive southern California native species including the coastal western whiptail lizard, coastal cactus wren, Cooper's hawk, olive-sided flycatcher, southwestern pond turtles, Riverside fairy shrimp, and San Diego woodrat.

Fragmentation of undeveloped open space is a serious threat to existing biodiversity in California. This fragmentation results not simply from large scale development, but also from smaller scale land conversion. Hence, while the Keck Graduate Institute is slated to occupy only some eleven acres of the 85 acre Bernard Biological Field Station, its effect, cumulated with the general pattern of land development in the area, will be significant.

The Field Station is well positioned for exploring the interface between the urban and the wild. Book learning alone is insufficient when attempting to assess or ameliorate human impacts on the natural world. Learning about nature from direct contact is important not just curricularly, but practically: as remaining natural areas decrease in size and complexity, we need to learn how to manage better our remaining fragments of wildness. We need to learn how to mitigate the effect of urban and suburban areas on natural areas, how to restore disturbed areas, and how to re-introduce the wild into the urban. We need more, and more passionate, conservation biologists, ecologists, and environmental educators.

Outdated models of land development cannot work—ecologically or pedagogically—in southern California, given the dwindling of biological diversity in this region. Proponents of development on the Bernard Biological Field Station note (probably correctly) that the donor of the land intended it to be used for the development of additional colleges. The deed to the land, however, indicates that the land be put to "educational use," and does not specify future colleges. I believe that a field station is the best educational use of this land, and that in evaluating land use options we must balance the original vision with evolving priorities. (It was, for example, not all that long ago when there was a bounty on wolves in this country; now millions of dollars are spent on wolf introductions in some areas.) The educational and ecological value of the field station lands goes up as the ecological integrity of surrounding lands diminishes.

Coastal Sage Scrub is an endangered ecosystem due to the accumulated effects of urban sprawl and other human activities such as ranching and farming. Nearly surrounded by development (housing tracts, thoroughfares, commercial areas, and colleges), the island effect of the Field Station provides a valuable study opportunity, as does its mixture of relatively disturbed and undisturbed areas. The field station provides a secure (fenced) work area, where long-term experiments can be conducted, and where equipment

pHake Lake, Bernard Biological Field Station of the Claremont Colleges.

security and personal safety are enhanced. Because of its proximity to campus, the Field Station is readily accessible for science labs and independent studies. The Station serves about 950 students a year directly through classes at the Claremont Colleges, and more than 50 students have written senior theses based on field research conducted at the field station since its inception.

The Claremont Colleges own other land that is, in my view, more appropriate for the development of a new college, for example a 35 acre golf course and an 80 acre non-operational gravel quarry. None of these parcels currently have much educational value. Additionally, they all have low biological constraints, requiring no mitigation if they were to be built upon. These are the properties that I believe should have been prioritized for development by those seeking to establish a new institution. An additional concern lies in the nature of the institution added to the Claremont educational consortium; a graduate school of bioengineering.

Biotechnology and Environmental Justice

As Jerry Mander has noted, all new technologies are introduced in terms of their utopian possibilities. The parameters of the debate over the appropriateness of future technologies are usually set by the people who benefit from a positive outcome, corporations for example. It should be noted that the Keck Graduate Institute is slated to have close industry ties. Biotechnology is now a major industry, with more than 1,300 U.S. companies, nearly $13 billion in annual revenues, and more than 100,000 people on its payrolls. In the context of higher education, universities are increasingly utilizing public funding to conduct research which then benefits corporate partners before the work ever becomes public. In cases such as these, the ethics of mingling public research and private enterprise are at best problematic.

Genetic engineering is concerned, largely, with intervening in and altering life on Earth. Bioengineers often strive to re-create life forms according to industry needs and consumer ideals. Consider some of the recent applications of biotechnology: Israeli researchers have reported advances on creating featherless chickens; the birds don't use up precious energy producing their plumage, but so far, in addition to looking grotesque, they don't function normally. In Australia, sheep were injected with a genetically engineered hormone that produces breaks in the wool fibers as they grow, facilitating simple shearing; among the unforeseen side effects are severe sunburn and heat stress. New life forms are now being legally patented. It seems we're intent on reducing life to the status of a manufactured commodity, making it indistinguishable from other commercial products.

New life forms are now being legally patented. It seems we're intent on reducing life to the status of a manufactured commodity, making it indistinguishable from other commercial products.

Consider, too, issues of environmental justice as they relate to pesticides. We know that pesticides are dangerous in many ways; dangerous to people who eat pesticide residues on their food, dangerous to farmers and farm workers, and dangerous to wildlife. But the agrochemical corporations are more persuasive than the activists, and pesticide use has continued to increase in the U.S., and is rocketing upwards worldwide. Farm workers have heavy exposure to these chemicals and suffer high incidents of poisoning. Each year there are an estimated 1 million poisonings among farm workers. These workers suffer the highest rates of occupational illness of any group because of their exposure to pesticides. Many children, too, work in the fields.

What does this have to do with genetic engineering? Biotechnology is being used to create genetically engineered herbicide-resistant food crops, which will lead to increased use of herbicides. More than 700 field tests of genetically engineered organisms and plants in the United States have been conducted to increase herbicide tolerance. Monsanto Corporation has developed seed varieties (largely soybean and canola) that are "Roundup ready," meaning they have been genetically engineered to withstand dousing with Monsanto's herbicide, glyphosate, which is marketed under the trade name Roundup. Monsanto's engineering efforts and marketing strategies are designed to boost agricultural sales of Roundup, Monsanto's best-selling and most profitable product.

What we put into our bodies cannot be disassociated from issues of human rights and environmental sustainability. Pesticides are poisons, and as we poison ourselves biologically, so too do we destroy ourselves socially. The U.S. is the largest user of pesticides worldwide; we use about 1 billion pounds each year. The use of some chemicals, such as

DDT, has been banned in the U.S.; yet we continue to manufacture DDT here and ship it to developing countries which use them on produce being grown for the U.S. market.

Some insurance companies use genetic screening to refuse coverage to people with so-called cancer genes. In a 1997 Georgetown University study, 47% of those who mentioned the inherited condition on their insurance policies were denied coverage. Not only are we creating new opportunities for discrimination, but we are not addressing the full source of the problem, which includes human-created toxins. And the effort to predict diseases without striving to prevent the use of disease-causing toxins is questionable.

long run. And, in relation to biotechnology in Claremont, I have trouble seeing the value in building on, and thereby eliminating a portion of, an educationally important field station in pursuit of this cause.

The Nature of the Problem

The issues that I address in this essay—environmental justice, land development, and biotechnology—are interrelated inasmuch as they conform to, and shape, our experiences of social and ecological diversity. Social diversity and ecological diversity are correlated; as we diminish one, so too do we diminish the other. All Homo sapiens need contact with nature, with the non-human

sometimes perceived as providing the vision for society to move in socially and environmentally sustainable directions. Given this charge, it is especially troubling to witness our own unfortunate land planning decisions. At a time of increasing need for training in the field sciences, a need reflected in a 16% national growth rate for the educational use of biological field stations, it seems shortsighted to reduce the size of an already small station.

What You Can Do

The Keck Graduate Institute has mindful, concerned individuals involved with in its planning, and they will carefully listen to thought-

Together we can strive to make the institute of genetic engineering that is now a part of our consortium work for social and environmental justice.

Consider, too, gene-line therapy and designer babies. Who, for example, decides when it is ethically permissible to alter the gene structure of future generations? As humans and other organisms become subject to preplanning, less popular characteristics will drop out of the gene pool, and human and biological diversity will diminish.

There are troubling concerns with biotechnology that may serve to partition society and create a kind of genetic aristocracy. Sure, we want to better our children's lives and improve their possibilities for prospering in this world, but to do this by gaining control over genetics will give some people even greater control over other people than we already have.

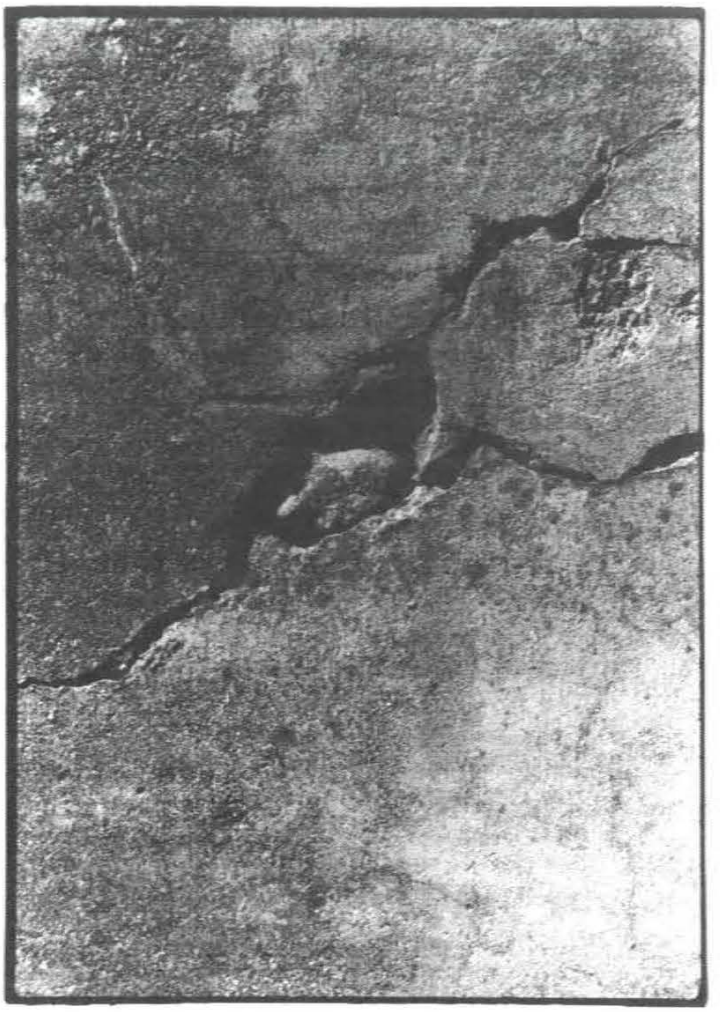
This is not to suggest that biotechnology per se is inherently wrong, just that it is inherently dangerous. Biotechnology most probably does have some benefits for humans. In any event, what benefits humans in the short run is not necessarily what benefits humans or the planet in the

'other'. The notion that urban dwellers, or people of lower socioeconomic status have less need to affiliate with nature is misguided. Nature's potential for fostering human fulfillment may be less immediately apparent among the urban oppressed, who are rightly concerned with issues of equity and material well-being. However, this represents a challenge to our society; not evidence of the irrelevance of the natural world to an entire class of people. Our challenge and opportunity is to make the positive experience of nature accessible to all rather than to dismiss it as relevant only to an elite minority.

Our current environmental crisis is symptomatic of our fractured relationship with the natural world, and with each other. We are unlikely to succeed in appreciating and restoring the natural environment if we lack the knowledge and passion to restore human communities. Revitalizing communities is key to ecological health and social harmony. Institutions of higher learning are

ful input. We at the Claremont Colleges have a challenge and an opportunity facing us, but we have yet to fully seize it in the fostering of appropriate values, the nurturing of ideals, and the envisioning of a healthier future. Together we can strive to make the institute of genetic engineering that is now a part of our consortium work for social and environmental justice.

The draft environmental impact report (EIR) for the Field Station plan will soon be released by the City for public comment. By law, all public comments must be considered and responded to in the formulation of the final EIR, so it is important to comment in writing. It is the City that will make final decisions in response to the recommendations of the EIR and the conditions placed on building permits. When the draft EIR is released it will be available at City Hall and the Claremont Library. It will then be time to tell the City of Claremont about your hopes for the long-term preservation of the Bernard Biological Field Station.



Photos by Rena Grice

Left: "Minute Landscape"
Bottom: "Layers"